

## EAST Search History

| Ref # | Hits    | Search Query   | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|---------|--|---|------------------|---------|------------------|
| S1    | 423     | 310/359.ccls.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/04/05 18:01 |
| S2    | 1607    | 310/330-332.ccls.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 09:38 |
| S3    | 1242    | 310/348.ccls.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 11:48 |
| S4    | 267534  | piezo\$  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 11:48 |
| S5    | 4728915 | recess hole cavity depression<br>concavity   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 11:49 |
| S6    | 345365  | (recess hole cavity depression<br>concavity) with (substrate ceramic<br>semiconductor (printed adj circuit)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 11:50 |
| S7    | 16435   | S4 and S6  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 11:50 |
| S8    | 30426   | (secondary second) with piezo\$  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2007/03/22 11:51 |

## EAST Search History

|     |         |   |   |    |    |                  |
|-----|---------|---|---|----|----|------------------|
| S9  | 3420    | S6 and S8                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/22 11:51 |
| S10 | 1065280 | insulat\$3 with (layer material)              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:50 |
| S11 | 1574    | S9 and S10                                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/22 11:52 |
| S12 | 629     | 310/338.ccls.                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/26 18:08 |
| S13 | 111862  | MOSFET IGBT                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/26 18:09 |
| S14 | 1607    | 310/330-332.ccls.                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/26 18:09 |
| S15 | 152     | S14 and feedback                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/26 18:09 |
| S16 | 468     | (second\$3 with piezo\$) and<br>(MOSFET IGBT) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 08:16 |

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|     |        |  |   |    |    |                  |
|-----|--------|--|---|----|----|------------------|
| S17 | 30277  | (second\$3 with piezo\$)                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 11:55 |
| S18 | 313599 | modulator demodulator                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 16:53 |
| S19 | 67     | S16 and S18                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 08:17 |
| S20 | 1728   | S17 and S18                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 08:25 |
| S21 | 433142 | rectifier (lock with (device component)) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 16:58 |
| S22 | 1266   | S17 and S21                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 13:52 |
| S23 | 632    | 310/324.ccls.                            | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 14:47 |
| S24 | 1008   | 310/317.ccls.                            | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 14:47 |

## EAST Search History

|     |        |  |   |    |    |                  |
|-----|--------|--|---|----|----|------------------|
| S25 | 46252  | modulator and demodulator                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 16:57 |
| S26 | 4      | S24 and S25  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 16:53 |
| S27 | 3339   | modulator and demodulator and<br>rectifier               | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 17:19 |
| S28 | 419883 | (lock\$3 with (device component))                        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 16:58 |
| S29 | 558    | S17 and S28  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 16:58 |
| S30 | 3484   | modulat\$3 and demodulat\$3 and<br>rectif\$4 and lock\$3 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:49 |
| S31 | 267716 | piezo\$  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 17:19 |
| S32 | 497    | S30 and S31  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/27 17:19 |

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|     |         |  |   |    |    |                  |
|-----|---------|--|---|----|----|------------------|
| S33 | 2259719 | rectif\$4 lock\$3  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:49 |
| S34 | 267716  | piezo\$  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:49 |
| S35 | 27947   | S34 and S33  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:49 |
| S36 | 1627867 | (insulat\$3 intermediate center<br>middle) with (layer material) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:50 |
| S37 | 6208    | S35 and S36  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:50 |
| S38 | 313599  | modulator demodulator  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 06:51 |
| S39 | 979     | S37 and S38  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 07:51 |
| S40 | 1691    | 310/317,318.ccls.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 09:56 |

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|     |      |   |   |    |    |                  |
|-----|------|---|---|----|----|------------------|
| S41 | 42   | S40 and demodulat\$3                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 10:04 |
| S42 | 6656 | piezo\$ and demodulat\$3                  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 10:04 |
| S43 | 1202 | piezo\$ and demodulat\$3 and<br>rectif\$3 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/03/28 10:05 |
| S44 | 102  | piezo\$ and (galvanic\$ with isolat\$)    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 17:35 |
| S45 | 629  | 310/338.ccls.                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 17:47 |
| S46 | 1608 | 310/330-332.ccls.                         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 17:47 |
| S47 | 2185 | S45 S46                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 17:47 |
| S48 | 629  | 310/338.ccls.                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 18:02 |

## EAST Search History

|     |      |                            |   |    |    |                  |
|-----|------|----------------------------|---|----|----|------------------|
| S49 | 1608 | 310/330-332.ccls.          | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 18:02 |
| S50 | 2185 | S48 S49                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 18:02 |
| S51 | 152  | S50 and (demod\$6 lock\$3) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 18:10 |
| S52 | 87   | S50 and (rectif\$4)        | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/05 18:10 |
| S53 | 629  | 310/338.ccls.              | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 07:57 |
| S54 | 1608 | 310/330-332.ccls.          | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 07:57 |
| S55 | 2185 | S53 S54                    | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 12:20 |
| S56 | 152  | S55 and (demod\$6 lock\$3) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 12:20 |

## EAST Search History

|     |      |  |   |    |    |                  |
|-----|------|--|---|----|----|------------------|
| S57 | 87   | S55 and (rectif\$4)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 12:20 |
| S58 | 225  | S56 S57  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 12:20 |
| S59 | 1694 | 310/317,318.ccls.  | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 12:20 |
| S60 | 378  | S59 and (demod\$6 lock\$3 rectif\$4)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/09 12:21 |
| S61 | 45   | (US-20020175597-\$ or<br>US-20050285476-\$ or<br>US-20020109439-\$ or<br>US-20020017135-\$ or<br>US-20050225203-\$ or<br>US-20060213054-\$ or<br>US-20030102774-\$ or<br>US-20060108944-\$ or<br>US-20040222718-\$ or<br>US-20010017506-\$).did. or<br>(US-7084554-\$ or US-5430342-\$ or<br>US-6888291-\$ or US-6713942-\$ or<br>US-RE33691-\$ or US-6617757-\$ or<br>US-3636469-\$ or US-3594514-\$ or<br>US-6933662-\$ or US-6666090-\$ or<br>US-5886514-\$ or US-5654605-\$ or<br>US-6943785-\$ or US-4096756-\$ or<br>US-5404067-\$ or US-5166573-\$ or<br>US-5233256-\$ or US-4349762-\$ or<br>US-4529904-\$ or US-3624564-\$ or<br>US-2614144-\$ or US-4317368-\$ or<br>US-4546658-\$ or US-6323583-\$ or<br>US-4916349-\$ or US-4363991-\$).<br>did. or (US-7084529-\$ or<br>US-6151232-\$ or US-6013969-\$ or<br>US-5923542-\$ or US-5673041-\$ or<br>US-4594526-\$).did. or<br>(US-3712962-\$ or US-3233466-\$).<br>did. or (DE-3684738-\$).did. | US-PGPUB;<br>USPAT;<br>USOCR;<br>DERWENT                          | OR | ON | 2007/04/11 08:37 |



## EAST Search History

|     |     |   |  |    |    |                  |
|-----|-----|---|--|----|----|------------------|
| S62 | 7   | S61 and demodulat\$6  | US-PGPUB;<br>USPAT;<br>USOCR;<br>DERWENT                                   | OR | ON | 2007/04/09 14:23 |
| S63 | 166 | piezo\$ and transform\$5 and<br>(modulat\$5 or demodulat\$6)  | FPRS;<br>EPO; JPO;<br>DERWENT  | OR | ON | 2007/04/11 10:41 |
| S64 | 48  | (US-20010017506-\$ or<br>US-20050285476-\$ or<br>US-20020175597-\$ or<br>US-20020109439-\$ or<br>US-20020017135-\$ or<br>US-20060108944-\$ or<br>US-20050225203-\$ or<br>US-20040222718-\$ or<br>US-20060213054-\$ or<br>US-20030102774-\$).did. or<br>(US-6617757-\$ or US-5233256-\$ or<br>US-5166573-\$ or US-RE33691-\$ or<br>US-4594526-\$ or US-4916349-\$ or<br>US-4349762-\$ or US-7084554-\$ or<br>US-6933662-\$ or US-6888291-\$ or<br>US-6713942-\$ or US-6323583-\$ or<br>US-3636469-\$ or US-3594514-\$ or<br>US-5430342-\$ or US-5404067-\$ or<br>US-6666090-\$ or US-5923542-\$ or<br>US-5886514-\$ or US-5654605-\$ or<br>US-6943785-\$ or US-4096756-\$ or<br>US-2614144-\$ or US-7084529-\$ or<br>US-6151232-\$ or US-6013969-\$).<br>did. or (US-5673041-\$ or<br>US-4529904-\$ or US-3624564-\$ or<br>US-4317368-\$ or US-4546658-\$ or<br>US-4363991-\$).did. or<br>(US-3233466-\$ or US-3712962-\$).<br>did. or (JP-55110083-\$).did. or<br>(DE-3684738-\$ or US-5883705-\$ or<br>GB-2013343-\$).did. | US-PGPUB;<br>USPAT;<br>USOCR;<br>JPO;<br>DERWENT                           | OR | ON | 2007/04/11 08:37 |
| S65 | 19  | S64 and (modulat\$5 or<br>demodulat\$6)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 15:01 |
| S66 | 17  | S64 and rectif\$5   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 09:16 |

## EAST Search History

|     |        |   |  |    |    |                  |
|-----|--------|---|--|----|----|------------------|
| S67 | 5      | S64 and lock\$4                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 09:19 |
| S68 | 1      | "10555344"                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 14:22 |
| S69 | 67     | "logic bistable"                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 09:25 |
| S70 | 100452 | "locking device"                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 09:25 |
| S71 | 268555 | piezo\$                                   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 09:26 |
| S72 | 576    | S70 and S71                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 10:31 |
| S73 | 5842   | piezo\$ and transform\$5 and<br>(lock\$4) | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 10:42 |

## EAST Search History

|     |     |  |  |    |    |                  |
|-----|-----|--|--|----|----|------------------|
| S74 | 982 | piezo\$ and transform\$5 and (lock\$4 and demodulat\$)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 10:43 |
| S75 | 9   | ("20010035698"   "3707636"   "5341061"   "5736807"   "6075325"   "6278226"   "6724126").PN. OR ("6943785").URPN. | US-PGPUB;<br>USPAT;<br>USOCR   | OR | ON | 2007/04/11 14:15 |
| S76 | 37  | S64 and (frequency resonan\$)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 14:42 |
| S77 | 14  | S64 and (second with resonan\$)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 14:52 |
| S78 | 2   | S64 and (multiple with resonan\$)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 14:52 |
| S79 | 73  | 310/317 and (piezo\$ adj transformer)  | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 15:30 |
| S80 | 205 | 310/317 and (piezo\$ with transformer)   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/12 08:50 |

## EAST Search History

|     |     |   |  |    |    |                  |
|-----|-----|---|--|----|----|------------------|
| S81 | 132 | S80 not S79   | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/11 15:31 |
| S82 | 230 | (integrated adj circuit) and switch<br>and (piezo\$ with transformer) | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2007/04/12 08:50 |